

Name _____

Please print your name as it appears on the class roster.

Express the angle in radian measure in terms of π .

1) 510°

1) _____

A) $\frac{17\pi}{12}$

B) $\frac{17\pi}{6}$

C) $\frac{17\pi}{3}$

D) $\frac{17\pi}{5}$

Convert the radian measure to degrees. Round to the nearest hundredth if necessary.

2) $\frac{17\pi}{36}$

2) _____

A) 80°

B) 85°

C) 90°

D) 88°

Find the exact value of the trigonometric function. Do not use a calculator or tables.

3) $\tan\left(\frac{4\pi}{3}\right)$

3) _____

A) $\sqrt{3}$

B) $-\sqrt{3}$

C) 1

D) $-\frac{\sqrt{3}}{3}$

Find the exact value of the expression.

4) $\sin^2\frac{\pi}{12}$

4) _____

A) $\frac{1-\sqrt{3}}{2}$

B) $2-\sqrt{3}$

C) $\frac{2-\sqrt{3}}{4}$

D) $\frac{2+\sqrt{3}}{4}$

Which answer choice is equivalent to the given expression?

5) $\cos^2 x - \sin^2 x$

5) _____

A) 1

B) $3 \tan^2 x$

C) $\csc^2 x$

D) $2 \cos^2 x - 1$

6) $\sec v - \tan v \sin v$

6) _____

A) $\cot v$

B) $\cos v$

C) $1 - \csc v$

D) $\csc v$

7) $\sin 2x \csc x$

7) _____

A) $2 \tan x$

B) $2 \sec x$

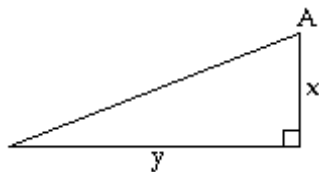
C) $2 \cot x$

D) $2 \cos x$

Use the inverse trig functions to express the angle in terms of the indicated unknown side.

8)

8) _____



Given that $y = 6$, express angle A in terms of x . Use one of the inverse trig functions \tan^{-1} , \sin^{-1} , or \cos^{-1} .

A) $A = \sin^{-1} \frac{x}{6}$

B) $A = \tan^{-1} \frac{x}{6}$

C) $A = \tan^{-1} \frac{6}{x}$

D) $A = \sin^{-1} \frac{6}{x}$

Find dy/dt .

9) $y = \cos^3(\pi t - 10)$

9) _____

A) $3 \cos^2(\pi t - 10)$

B) $-3\pi \sin^2(\pi t - 10)$

C) $-3\pi \cos^2(\pi t - 10) \sin(\pi t - 10)$

D) $-3 \cos^2(\pi t - 10) \sin(\pi t - 10)$

Find the second derivative, y'' , of the following function.

10) $y = \frac{1}{5} \tan(9x - 5)$

10) _____

A) $\frac{162}{5} \sec^2(9x - 5) \tan(9x - 5)$

B) $\frac{2}{5} \sec^2(9x - 5) \tan(9x - 5)$

C) $\frac{2}{5} \sec(9x - 5)$

D) $\frac{9}{5} \sec^2(9x - 5)$

Find the second derivative, y'' , of the following function.

11) $y = \sin(8x^2e^x)$

11) _____

A) $16xe^x \cos(8x^2e^x) + 8x^2e^x \cos(8x^2e^x)$

B) $(x^2 + 4x + 2)e^x \cos(8x^2e^x) + 8xe^x(x^3 + 4x^2 + 4x) \cos(8x^2e^x)$

C) $-16e^x \sin(8x^2e^x) - 16xe^x \sin(8x^2e^x)$

D) $8(x^2 + 4x + 2)e^x \cos(8x^2e^x) - 64xe^{2x}(x^3 + 4x^2 + 4x) \sin(8x^2e^x)$

Find the derivative of y with respect to x .

12) $y = \tan^{-1} \sqrt{3x}$

12) _____

A) $\frac{1}{1+3x}$

B) $\frac{1}{\sqrt{1-3x}}$

C) $\frac{1}{6\sqrt{3x(1+3x)}}$

D) $\frac{3}{2(1+3x)\sqrt{3x}}$

Find the limit.

13) $\lim_{x \rightarrow -\infty} \tan^{-1} x$

13) _____

A) $-\infty$

B) $-\frac{\pi}{2}$

C) $\frac{\pi}{2}$

D) 0

Evaluate the integral.

14) $\int_{\pi/2}^{3\pi/2} 14 \cos x \, dx$

14) _____

A) 28

B) -28

C) -14

D) 14

15) $\int_{-\pi/4}^{3\pi/4} 4 \sec \theta \tan \theta \, d\theta$

15) _____

A) $-8\sqrt{2}$

B) $-4\sqrt{2}$

C) $4\sqrt{2}$

D) 0